

OBSERVATIONS ON THE BIOLOGIES OF *ENOCLERUS ABDOMINALIS* (CHEVROLAT) AND *ENOCLERUS OPIFEX* (GORHAM) (COLEOPTERA: CLERIDAE)¹

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ABSTRACT

Observations on the feeding, mating, and ovipositional activities of *Enoclerus abdominalis* (Chevr.) and *Enoclerus opifex* (Gorham) are discussed. The association of *E. opifex* with *Dasytirion texanum* Scheele, and of both clerids with *Yucca thompsoniana* Trel. and with a weevil (*Peltophorus polymitus* Boh.) are reported.

Although both *Enoclerus abdominalis* (Chevr.) and *Enoclerus opifex* (Gorham) have been known from the United States for many years, information concerning their biologies has been limited to short statements by Wickham and Wolcott (1912) and Böving and Champlain (1920). For this reason the following notes, although incomplete, are presented.

Information concerning *E. abdominalis* was gathered on 28 July 1969, 4 miles west of Marathon, Brewster County, Texas; from rearing specimens collected 7 June 1970, loc. cit.; and both *E. abdominalis* and *E. opifex* were observed on 7-13 May 1971, 14 miles west of Comstock, Val Verde County, Texas.

DISTRIBUTION: *E. abdominalis* has been recorded from several Mexican locations (Vaurie 1952) and from the south central and southwestern United States (Corporaal 1950). *E. opifex* was described from Guanguato, Mexico; at that time Guatemala and Nicaragua were included in its range (Gorham 1882). Its occurrence in the United States is limited to the Trans-Pecos and Big Bend regions of Texas and adjacent portions of New Mexico (Wolcott 1911).

PLANT ASSOCIATIONS: *E. abdominalis* has been recorded from the blossoms of yucca. *E. opifex* has been recorded from yucca and agave. During the course of this study, *E. abdominalis* was observed on *Yucca thompsoniana* Trel. *E. opifex* was observed on *Y. thompsoniana* and *Dasytirion texanum* Scheele (commonly known as sotol).

Enoclerus abdominalis (Chevrolat)

ADULT ACTIVITY: During the day, adults of this species can be observed on the leaves, stalks, or blossoms of yucca. Nights are usually passed on the lower part of the stalk or adjacent leaves. Adults have been observed occasionally spending the night on the flower heads.

Mating occurs on the stalk and flowers. Two instances of mating were observed in their entirety. During each instance the male vibrated his an-

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tennae rapidly before contacting the female, while exploring her position, and during copulation. In each case the female ceased other activity during copulation. One copulation lasted 4 minutes and the other lasted 3.25 minutes.

DEVELOPMENTAL STAGES: Larvae develop within the plant stalk and feed on the larvae of a weevil, *Peltophorus polymitus* Boh. Mature larvae spend the winter in old feeding galleries of the host where they pupate the following spring.

Enoclerus opifex (Gorham)

DAILY ACTIVITY: The daily activities of *E. opifex* are closely associated with certain desert plants including sotol, agave, and yucca. The larvae live within the stalk of these plants, preying upon phytophagous insect larvae found there. During the day adults can be found on the stalk, blossoms, and leaves. They commonly spend the night at the base of the stalk or on adjacent leaves. Occasionally they stay on the upper stalk or blossoms.

MATING ACTIVITY: Mating activity occurs on the plant and can be observed during all daylight hours. One mating was observed in its entirety. Both participants were present on the plant when the observation began. The male crawled to where the female was feeding on a bud. He vibrated his antennae rapidly and constantly while approaching, then explored the position of the female with his antennae. The female vibrated her antennae periodically while copulating and continued to feed intermittently during the entire time. After disengaging his aedeagus, the male flew to an adjacent plant. The female continued to feed on the plant where copulation had occurred.

ADULT FEEDING BEHAVIOR: Although several hours were spent watching adults, no evidence of predation was observed. Rather, *E. opifex* appeared to feed primarily on the tissues and fluids of the host plant. Individuals were often observed chewing on the tender tissues of unopened buds and feeding on the ensuing exudate. *E. opifex* also exhibits a feeding association with a large coreid, *Acanthocephala granulosa* (Dall.), that commonly feeds on the terminal portion of sotol and yucca stalks. The clerid stations itself near a feeding coreid. When the bug withdraws its proboscis and moves to another feeding site, the clerid approaches the abandoned feeding site and proceeds to feed on the exudate accumulating at the wound. The same phenomenon was observed in association with *P. polymitus*.

OVIPOSITIONAL ACTIVITY: The relationship of *E. opifex* to the weevil apparently goes beyond opportunistic feeding. On one occasion a few minutes before dark, a female weevil was observed ovipositing on a yucca stalk about 3 decimeters above its base. As the weevil oviposited, it was approached by an *E. opifex* female which explored the weevil with her antennae and then waited motionless except for continual antennal vibrations. As soon as the weevil withdrew her ovipositor and moved away,

the female clerid explored the ovipositional wound. She first fed on exudate from the wound, then stationed her abdomen over the site and proceeded to deposit a single egg. The egg was placed at the edge of the wound. After ovipositing, the clerid moved to the base of the plant where she spent the night. From these observations it seems likely that larvae of *E. opifex* prey upon immature stages of the weevil.

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HELOPHORUS BREVIPALPIS BEDEL IN
NORTH AMERICA
(COLEOPTERA: HYDROPHILIDAE)

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ABSTRACT

North American records for the Old World *Helophorus brevipalpis* Bedel are confirmed by 16 female specimens from Logan Canyon, Utah.

In a previous publication (Angus 1970a) I showed that the beetle recorded in North America as *H. brevipalpis* Bedel by McCorkle (1965, 1967) was not that species, but *H. orientalis* Motschulsky. Subsequently (Angus 1970b) I reported a genuine *H. brevipalpis* from Logan Canyon, Utah, among material sent in tubes of alcohol to the British Museum (Natural History) in London.